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Response to Office Action of January 14, 2005

Docket No.: 532792000610

REMARKS

Reconsideration is respectfully requested.

The Examiner has rejected Claims 1-4, 7-13, 15, 17-23, 25, and 27-41. In this response, Applicants seek to amend independent claims 1, 12, and 22 to put them and their dependent claims in condition for allowance or in better condition for appeal, amend claims 13 and 23 for clarity, and cancel claims 5, 14, 24 and 33-41. Therefore, this amendment after final is submitted in accordance with 37 C.F.R. §1.116.

After entry of these amendments, claims 1-4, 6-13, 15-23 and 25-32 will be pending.

Information Disclosure Statement

Applicants thank the Examiner for considering the references submitted with the Information Disclosure Statement filed November 3, 2004, and returning the signed Form 1449.

Telephonic Interview

Applicants thank Examiner Collins for the very helpful telephonic interview conducted on February 28, 2005. This response is submitted pursuant to that discussion.

Claim Rejections Under 35 U.S.C. § 112, first paragraph. Written Description

Claims 1, 12 and 22 are rejected under 35 U.S.C. § 112 as allegedly failing to comply with the written description requirement, more specifically as allegedly containing subject matter which was not described in the specification. Applicants respectfully traverse the rejection. Applicants respectfully submit that the specification, for example, at page 65, line 14, to page 66, line 28; page 69, line 1 to page 70, line 10; and page 70, line 21-22 ("One way of regulating tissue specific responses to brassinolide is by inactivation of the steroid through BAS1 mediated hydroxylation"), provides adequate support for the limitation "which converts an active brassinosteroid to an inactive brassinosteroid..." However, in order to expedite examination in this application, the recitation "is a cytochrome P450 which converts an active brassinosteroid into an inactive brassinosteroid" has been removed from claims 1, 12, and 22. Applicants respectfully request that

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the Examiner withdraw the rejection of claims 1, 12 and 22 based upon 35 U.S.C. § 112, first paragraph, written description.

Claims 1-4, 7-13, 15, 17-23, 25, and 27-32 are rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to comply with the written description requirement, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, has possession of the claimed invention. Applicants respectfully traverse the rejection. Applicants respectfully submit that those of skill in the art, in view of the specification and the functional limitation included in the claims as previously amended, would readily recognize that Applicants had possession of the claimed invention. However, in order to facilitate prosecution, claims 1-4, 7-13, 15, 17-23, 25, and 27-32 have been amended to include the recitation that the claims are directed to SEQ ID NO: 2. Support for this amendment exists in the specification on page 13, lines 21-24. As such, the claims fully comply with the Written Description requirement.

Newly added claims 33-41 were also rejected for the above reason. These claims are canceled with this response.

In light of the above, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-4, 7-13, 15, 17-23, 25, and 27-32 based upon 35 U.S.C. § 112, first paragraph, written description.

Claim Rejections Under 35 U.S.C. § 112, first paragraph, Enablement

Claims 1-4, 7-13, 15, 17-23, 25 and 27-32 are rejected, and new claims 33-41 are newly rejected under 35 U.S.C. § 112, first paragraph, because the specification allegedly does not provide enablement for methods of transforming plants with exogenous nucleic acid sequences of unspecified sequence encoding other BAS1 polypeptides, or for methods of transforming plants with other exogenous nucleic acids sequences. Applicants respectfully traverse the rejection. As acknowledged by the Examiner, the specification is enabling for a method of producing a genetically modified plant characterized as having dwarf adult stature by transforming a plant with an exogenous nucleic acid sequence encoding a BAS 1 polypeptide having the amino acid of SEQ ID NO:2. Applicants respectfully submit that those of skill in the art would understand how to

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product a genetically modified plant characterized as having dwarf adult stature by transforming a plant with nucleic acid sequences encoding polypeptides having at least 80% identity to SEQ ID NO:2, or with nucleic acid sequences having 80% identity to SEQ ID NO:1. However, in order to facilitate prosecution of the application claims 1, 12, and 22 have been amended to specify amino acid sequence SEQ ID NO: 2 or the nucleotide sequence SEQ ID NO: 1 and claims 33-41 have been cancelled. In view of the amendments herein, Applicants respectfully request withdrawal of the rejection of claims 1-4, 7-13, 15, 17-23, 25 and 27-32 and 33-41.

Claims 35, 38, and 41 are rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to provide sufficient antecedent basis for the recitation "the oligonucleotide of SEQ ID NO: 1". Applicants respectfully traverse the rejection. The cancellation of claims 35, 38 and 41, however, renders moot the rejection.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 12-13, 15, 17-18, 21-23, 25, 27-29 and 31 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Mangold, et al. (Plant Science, Vol. 96, pages 129-136, 1994). Applicants respectfully traverse the rejection.

Applicants' invention requires a genetically modified plant that comprises at least one exogenous nucleic acid sequence encoding a BAS1 polypeptide wherein the amino acid sequence of the BAS1 polypeptide is set forth in SEQ ID NO:2. Furthermore, Applicants' invention requires a seed that germinates into a plant comprising at least one *bas1* exogenous nucleic acid sequence wherein the *bas1* nucleic acid sequence encodes the amino acid sequence set forth in SEQ ID NO:2. In contrast, the *Catharanthus roseus* cytochrome P450 taught by Mangold, et al. has only about 42% sequence identity with BAS1 at the amino acid level (see specification, page 11, line 23). Mangold, et al. fail to teach BAS1 polypeptides having the amino acid sequence set forth in SEQ ID NO:2. Therefore, Mangold, et al. fail to anticipate the claimed invention. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 12-13, 15, 17-18, 21-23, 25, 27-29 and 31 based on 35 U.S.C. § 102(b).

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Claim Rejections Under 35 U.S.C. § 103

Claims 20, 30 and 32 are rejected under 35 U.S.C. § 103 as being allegedly obvious over Mangold, et al. (Plant Science, Vol. 96, pages 129-136, 1994), in view of Persans, et al. (Plant Physiology, 1995, Vol. 109, pages 1483-1490) and in further view of Lyznik, et al. (The Plant Journal, 1995, Vol. 8, No. 2, pages 177-186). Applicants respectfully traverse the rejection.

Applicants' invention requires a genetically modified plant that comprises at least one exogenous nucleic acid sequence encoding a BAS1 polypeptide wherein the amino acid sequence of the BAS1 polypeptide is set forth in SEQ ID NO:2. Furthermore, Applicants' invention requires seed that germinates into a plant comprising at least one *bas1* exogenous nucleic acid sequence wherein the *bas1* nucleic acid sequence encodes the amino acid sequence set forth in SEQ ID NO:2. In contrast, and as discussed above, Mangold, et al. fail to teach polypeptides having the sequence set forth in SEQ ID NO: 2. The deficiencies of Mangold can not be cured by reliance on Persans et al. or Lyznik et al. Neither Persans et al. nor Lyznik et al. teach or suggest plants comprising an exogenous amino acid sequence wherein the sequence is set forth in SEQ ID NO:2 or seed that germinates into a plant comprising an exogenous *bas1* nucleic acid sequence where the *bas1* sequence encodes the amino acid sequence set forth in SEQ ID NO:2. Since neither Mangold, et al., Persans, et al. nor Lyznik, et al. either alone or in combination teach or suggest SEQ ID NO: 2, there is no *prima facie* case for obviousness for lack of one of the elements of the claims. Therefore, Mangold, et al., in view of Persans, et al., and in further view of Lyznik et al. fail to render the claimed invention obvious.

In light of the above, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 20, 30, and 32 based upon 35 U.S.C. §103.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

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In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 532792000610.

Dated: June 13, 2005

Respectfully submitted,

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